

SKOPINTSEV, B.A.; TIMOFEYEVA, S.N.

Using the L. P. Krylova's method of dry combustion in determining  
the organic carbon in sea water. Gidrokhim. mat. 32:153-164 '61.  
(MIRA 14:6)

1. Morskoy gidrofizicheskiy institut AN SSSR, Lyublino,  
Moskovskaya oblast'.

(Water--Analysis)

(Carbon)

(Pyrolysis)

L 33167-66 ENT(1) GW  
 ACC NR: AP6014281 (N) SOURCE CODE: UR/0213/66/006/002/0251/0260  
 AUTHOR: Skopintsev, B. A.; Timofeyeva, G. H.; Vershinina, O. A. 25  
 13  
 ORG: Marine Hydrophysics Institute, AN UkrSSR (Morskoy gidrofizicheskiy institut AN  
 TITLE: Organic carbon in the waters near the equatorial and southern parts of the Atlantic Ocean and in the Mediterranean Sea  
 12  
 SOURCE: Okeanologiya, v. 6, no. 2, 1966, 251-260  
 TOPIC TAGS: ocean property, oceanographic expedition, ~~oceanographic ship, organic carbon~~  
 ABSTRACT: Observational data carried out during the 12th and 15th cruises of the research vessel "Mikhail Lomonosov" in 1962-1964 have been used for studies of the total and suspended organic carbon and of the permanganate oxidizability in alkaline or neutral media. It has been determined that the organic carbon content in the southern and northern parts of the Atlantic Ocean and in the Mediterranean Sea is almost the same, averaging 1.5 mg/l for the Atlantic Ocean. The carbon content shows a 1.5 decrease from the surface down to 3000 m. A 1.3 decrease is observed from the surface down to 150 m. The suspended carbon content also decreases with depth; it comprises ~ 3-9% of the total carbon. Permanganate oxidizability diminishes approximately by 2 from the surface down to 3000 m. The oxidizability/organic carbon ratio  
 Card 1/2 DC: 551.464.626(262/263/264)

L 33167-66

ACC NR: AP6014281

(O<sub>2</sub> mg/l: C<sub>org</sub> mg/l) averages 0.5 if the oxidizability determinations are made in an alkaline medium and 0.15 if determinations are made in a neutral medium. Orig. art. has: 6 tables. [Based on authors abstract.] [NT]

SUB CODE: 08/ SUBM DATE: 23Dec65/ ORIG REF: 009,

LS.

Card 2/2

SKOPINTSEV, B.A.; KARPOV, A.V.; TIMOFEYEVA, S.N.

Using an autoclave to determine the mineralization of organic matter  
in natural waters. *Gidrokhim. mat.* 35:183-199 '63. (MIRA 16:7)

1. Morskoy gidrofizicheskiy institut AN SSSR.  
(Water--Composition) (Organic matter)

TOKAREVICH, K.N.; TIMOFEYeva, S.S.; POPOVA, Ye.M.

Materials on leptospirosis in the Arctic regions; preliminary  
report. Trudy Len. inst. epid. i mikrobiol. 25:270-276 '63.  
(MIRA 17:1)

TIMOFEYeva, S.S.

/ Materials on Q fever in the Far North; preliminary report.  
Trudy Len. inst. epid. i mikrobiol. 25:70-74 '63.  
(MIRA 17:1)

TIMOFEYEV, T.

Sectionless operation. Mias. ind. SSSR 29 no.2;46 '58.

(MIRA 11:5)

1.Direktor Moskovskogo kolbasnogo zavoda No.2.  
(Packing houses)

TIMOFEYEVA, T. A.

Timofeyeva, T. A. "The effect of countermeasures on the inhibition process,"  
Trudy fiziol. laboratoriy im. Pavlova, Vol. XIII, 1948, p. 154-74

SO: U-2888, Letopis zhurnal'nykh Statey, No. 1, 1949

TIMOFEYEVA, T. A.

Timofeyeva, T. A. "Research on the superior nerve activity of a dog of the "intermediate type", " Trudy fiziol. laboratorii im. Pavlova, Vol. XIV, 1948, p. 3-36

SO: U-3264, 10 April 1953, (Letopis 'Zhurnal Inykh Statey, No. 3, 1949)

11/10/2/16-11, 11/11  
USPENSKIY, Yu.N., prof; TIMOFEYEVA, T.A.; SHVARTSER, I.V.

Activity of salivary glands in dogs after a single mass X-irradiation  
of the abdomen [with summary in English]. Med.rad. 2 no.6:37-41  
N-D '57. (MIRA 11:2)

1. Iz kafedry normal'noy fiziologii (zav. - prof. Yu.N.Uspenskiy)  
Astrakhanskogo meditsinskogo instituta  
(ROENTGEN RAYS, eff.  
abdom. irradiation on salivary gland funct. in dogs)  
(ABDOMEN, eff. of radiations on  
x-irradiation, on salivary gland funct. in dogs)  
(SALIVARY GLANDS, physiol.  
eff. of x-irradiation of abdom. in dogs)

FREYDENZON, Ye.Z.; FREYDENZON, Yu.Ye.; KOTSAR', S.L.; ZATULOVSKAYA, Ye.Z.;  
Prinimali uchastiye: KAS'YANOVA, K.S.; MIDRIK, L.Ya.; TIMOFEEVA,  
T.D.; KOTEL'NIKOVA, Z.G.; VOYLOSHNIKOVA, A.I.; VASEVA, R.S.;  
GNATYUK, P.I.; MYKOL'NIKOV, A.A.; BURKSER, A.Ye.; PONER, D.M.;  
OGORODNIKOV, G.K.

Developing an efficient shape for slab ingots. Stal' 25 no.6:  
539-543 Je '65. (MIRA 18:6)

1. Nizhne-Tagil'skiy metallurgicheskiy kombinat (for Ye. Freydenzon,  
Yu. Freydenzon, Kotsar', Zatulovskaya).

UMANSKIY, Z.M.; GENGROVICH, A.I.; TIMOFEEVA, T.F.

Quantitative determination of oil in pharmaceutical emulsions.  
Apt.delo 3 no.1:39-43 Ja-F '54. (MLRA 7:1)

1. Iz kafedry tekhnologii lekarstvennykh form i galenovykh preparatov Tashkentskogo farmatsevticheskogo instituta.  
(Emulsions) (Oil analysis) (Drugs--Adulteration and analysis)

E 40105-66 EWT(m)/EWP(t)/ETI IJP(c) JD/JG

ACC NR: AP6019564

SOURCE CODE: UR/C080/66/039/006/1256/1259

AUTHOR: Sayun, M. G.; Timofeyeva, T. G.

ORG: All-Union Scientific Research Mining and Metallurgical Institute of Nonferrous Metals "VNIITsVETMET" (Vsesoyuznyy nauchno-issledovatel'skiy gornometallurgicheskiy institut tsvetnykh metallov "VNIITsVETMET")

TITLE: Amalgam method of removal of cerium from samarium

SOURCE: Zhurnal prikladnoy khimii, v. 39, no. 6, 1966, 1256-1259

TOPIC TAGS: cerium, samarium, anodic oxidation, CHEMICAL SEPARATION, AMALGAM,

ABSTRACT: The object of the study was to investigate the feasibility of separating samarium from cerium by an amalgam method involving control of the anodic potential. Cerium was determined quantitatively by radiometric or spectrophotometric analyses. Depending upon the temperature, anodic current density and other factors, the decomposition of samarium amalgam begins at -1.3 to -1.2 V, and that of cerium, at -0.9 to -0.5 V. A mixed cerium-samarium amalgam was decomposed by controlling the anode potential; after the extraction of samarium from the amalgam, the anode potential was found to jump sharply upward to values necessary for the oxidation of cerium. This proved the feasibility of removal of cerium from samarium by the controlled potential method. Experiments showed that two consecutive operations of separation can produce a samarium concentrate of almost 100% purity. Orig. art. has: 1 figure and 1 table.

SUB CODE: 07, 11/ SUBM DATE: 14Jan63/ ORIG REF: 002/ OTH REF: 002

Card 1/1

UDC: 546.659+546.655+66.067.8

TIMOFEYeva, T.G.; LISITSKAYA, K.V.

Analysis of bismuth-tellurium-selenium containing alloys.  
Sbor.trud. VNIITSVETMET no.9:57-58 '65.

(MIRA 18:11)

RYZHIKOV, K.M.; TIMOFEEVA, T.N.

Plagiorchis nyrocae, a new species of trematode from the diving  
duck Nyroca marila. Trudy Gel'm. lab. 12:109-111 '62.  
(MIRA 15:7)  
(Kamchatka--Trematoda) (Kamchatka--Parasites--Ducks)

TIMOFEYEVA, T.N.

Revision of the genus *Plagiorchenis* Lühe, 1889. Trudy Gel'm. lab.  
12:225-227 '62. (MIRA 15:7)  
(Trematoda)

IVASHKIN, V.M.; TIMOFEYEVA, T.N.; KHROMOVA, L.A.

Causative agents of stephanophilariasis in cattle. Trudy Gel'm.  
lab. 11:109-114 '61. (MIRA 15:12)  
(Parasites—Cattle) (Stephanofilaria)

IVASHKIN, V.M.; TIMOFEYEVA, T.N.

Detection of *Thelazia lacrymalis* (Gurli, 1831) in asses. Trudy  
Gel'm.lab. 11:98-101 '61. (MIRA 15:12)  
(*Thelazia*) (Parasites--Asses and mules)

RYZHIKOV, K.M.; TIMOFEYEVA, T.N.

Helminths of wild and domestic water birds in Amur Province.

Trudy Gel'm.lab. 11:213-222 '61.

(MIRA 15:12)

(Parasites--Water birds)

(Amur Province--Worms, Intestinal and parasitic)

TIMOFEYeva, T.N.

*Thelazia skrjabinilina*, a new species of nematodes from the honey  
buzzard *Pernis ptilorhynchus*. Trudy Gel'm. lab. 14:238-242 '64.

(MIRA 17:10)

TIMOFEYEVA, T.N.

Discovery of the trematode *Astiotrema monticelli* Stossich, 1904  
(Plagiorchiidae) in the U.S.S.R. Trudy Gel'm.lab. 11:299-302 '61.  
(MIRA 15:12)

(Plagiorchioidea)

TIMOFFEYeva, T.N.

Species of the genus *Plagiorchis* Lühe, 1899, identical with *Pl. vespertilionis* (Müller, 1780). Trudy Gel'm. lab. 12:228-231 '62.

(Trematoda)

(MIRA 15:7)

KRAMOLOBOVA, T.A.; TIMOFEEVA, T.N.

New family of trematodes Echinoporidae Kramolobova et  
Timofeeva nov. fam. Trudy Gel'm. lab. 15:88-92 '65  
(MIRA 19:1)

TIMOFFEVA, T.S.

Hastingsite in the Kor-and-Sak ore deposit. Zap. Uz. otd. Vses.  
min. ol-va no.16:67-65 '64. (MIRA 18:6)

MERKHALEV, N.V.; TIMOFEYEVA, T.S.

Mineral germanium in coal abs. Uch. zap. SAIGIMSa no.7:77-83 '62.  
(MIRA 17:2)

1. Sredneaziatskiy nauchno-issledovatel'skiy institut geologii i  
mineral'nogo syr'ya, Tashkent.

TIMOFEYeva, T.S.

Some minerals of the oxidation zone of the Mosrif ore  
manifestation. Zap. Vses. min. ob-va 94 no.6:698-703 '65.  
(MIFA 18:12)

1. Deystvitel'nyy chlen Vsesoyuznogo mineralogicheskogo  
obshchestva.

TIMOFEEVA, T.S.

Find of viluite in a deposit of Central Asia. Zap. Uz. otd.  
Vses. min. ob-va no.14:169-171 '62. (MIRA 16:7)

(Soviet Central Asia—Minerals)

TIMOFEYeva, T. V.

"Conservatory Thrips, *Heliothrips haemorrhoidalis* Bouché, in the Subtropical Zone of Western Georgia." Cand Agr Sci, Inst of Plant Protection, Acad Sci Georgian SSR, Tbilisi, 1955. (KL, No 14, Apr 55)

SO: Sum. No. 704, 2 Nov 55 - Survey of Scientific and Technical Dissertations Defended at USSR Higher Educational Institutions (16).

TIMOFEYEVA, T. V.

"Visual Measurements of Fluctuations of Quanta. II," Zhur. eksper. i teoret.  
fiz., 12, Nos. 3-4, 1942

State Optical Inst.

TIMOFEYEVA, T. V.

"Visual Measurements of Quantum Fluctuations. II. Fluctuations when the Eye  
is Light-Adapted," Zhur. fiz., 9, No.1, 1943

State Optical Inst.

3

CL

Radioluminescence of potassium uranyl sulfate as the  
 basis for a low brightness standard. I. V. Timokha  
 Compt. rend. acad. sci. U.R.S.S. 47, 654-7; Dokl.  
 Akad. Nauk S.S.S.R. 47, 675-8 (1946). Mean values  
 of brightness of  $1.2 \times 10^{-4}$  and  $2.6 \times 10^{-4}$  apostilbs (0.1  
 millilamberts) were obtained for crystals 10 mm. and 20  
 mm. in diam., resp. John R. Hill

State Optical Inst

ASM-31A METALLURGICAL LITERATURE CLASSIFICATION

SECTION	SUBSECTION	CLASSIFICATION	REMARKS
1	1	1	1
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100	100	100	100

TIMOFEYEVA, T. V.

PA 36/49T83

USSR/Physics

Jan/Feb 49

Luminescence

Nuclear Physics - Alpha Radiation

"Luminescence Excited by Alpha Rays," T. V.  
Timofeyeva, State Opt Inst, 5 $\frac{1}{2}$  pp

"Iz Ak Nauk SSSR, Ser Fiz" Vol XIII, No 1

Studied dependence of intensity of scintillations (short flashes) upon dimensions of the crystals I (r) with excitation by alpha rays for zinc sulfide and several other substances (diamonds, willemite, etc.).

36/49T83

1ST AND 2ND ORDERS

PROCESSES AND PROPERTIES INDEX

1ST AND 2ND ORDERS

3

Phosphors with ultraviolet emission. V. V. Zelinskii and I. V. Timofeeva. *Doklady Akad. Nauk S.S.S.R.* 66, 187-9 (1949). Ultraviolet phosphorescence is shown by phosphates activated by  $Ce^{+++}$  or  $Ce^{++}$  salts. The efficiency decreases in the series of phosphates of Ca, Sr, Ba, Mg, Zn, and Cd. Introduction of  $MgCl_2$ ,  $MgF_2$ , or  $NaF$  increases the brightness. Particularly effective is  $MgCl_2$ , the optimum amt. of which varies with the basicity or acidity of the phosphate; thus, with  $Ca_3(PO_4)_2$ ,  $CaH_2(PO_4)_2$ , and  $CaH_4(PO_4)_2$ , the optimum amts. of  $MgCl_2$  were ~15, 30, and 35%, resp. With  $Ca_3(PO_4)_2$ , the brightness increased with the amt. of Ce up to about 5%, then remained const. between 5 and 9% Ce; with  $CaH_2(PO_4)_2$ , the brightness passed through a max. at about 6% Ce, with  $CaH_4(PO_4)_2$  at about 8% Ce. The best phosphor was obtained by pptg.  $CaCl_2$  with  $(NH_4)_2HPO_4$ , with both reagents purified with rubenic acid, mixing the Ca phosphate with  $MgCO_3$ , firing 1 hr. at  $1200^\circ$ , grinding with  $Ce(OH)_3$ , and firing 30 min. at  $1200^\circ$ . This phosphor emitted from about 330 m $\mu$ , with a max. at about 400 m $\mu$ . Its absorption curve has max. at ~270, 295, and 310 m $\mu$ , its excitation curve has max. at about 260, 270, 300, and 310 m $\mu$ . Contrary to Froelich (C.I. 41, 20064),  $Ce^{+++}$  has no unfavorable effect. N. Thon

COMMON ELEMENTS

OPEN MATERIALS INDEX

ASH-SLA METALLURGICAL LITERATURE CLASSIFICATION

1ST AND 2ND ORDERS										1ST AND 2ND ORDERS									
1ST AND 2ND ORDERS										1ST AND 2ND ORDERS									
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20

151187

USSR/Physics - Crystals 21 Jun 49  
Zinc Sulfide, Scintillation of

"Dependence of the Brightness of Zinc Sulfide  
Scintillations Upon the Size of the Crystals,"  
T. V. Timofeyeva, 2 pp

"Dok Ak Nauk SSSR" Vol LXVI, No 6

Obtained curves showing brightness of scintillations  
versus crystal size for four ZnS specimens. In  
three specimens, activator concentration was varied  
from  $3 \cdot 10^{-6}$  to  $2 \cdot 10^{-3}$  grams of Cu per gram of ZnS;  
otherwise, preparation was identical. Fourth  
specimen, prepared by another method, had an acti-  
vator concentration of  $1 \cdot 10^{-4}$  grams of Cu per gram  
151187

USSR/Physics - Crystals (Contd) 21 Jun 49

of ZnS. Curves plotting intensity of scintilla-  
tions against crystal size in microns showed  
optimum dimension for crystals in all specimens  
was always approximately 5 microns. Thus, optimum  
crystal size does not depend upon activator con-  
centration or even upon method of preparation of  
ZnS. Optimum value of crystal size is determined  
instead by complete absorption of the energy of  
exciting alpha-particles in zinc sulfide. Sub-  
mitted by Acad S. I. Yavilov, 19 Apr 49.

151187

TIMOFEEVA T. V.

**Efficiency of the luminescence of zinc sulfide in excitation by  $\alpha$ - and  $\gamma$ -rays.** T. V. Timofeeva. *Doklady Akad. Nauk S.S.S.R.* 67, 250-52 (1949); cf. C.A. 43, 6868i. — Measurements on 10 samples of ZnS of various origins. Measurements on conditions of complete absorption of the  $\alpha$ -rays, under conditions of complete absorption of the  $\gamma$ -rays, giving  $\alpha$ -particles, abs. luminescence yields of 0.5-2.0%; with a max. possible error of not over 100%. Consequently, the order of magnitude of the yield is the same as in excitation by cathode rays, and contradicts the erroneous very high efficiency figures of Wolf and Riehl (C.A. 25, 5838). In excitation by  $\gamma$ -rays, in the absence of  $\beta$ , the yields were found to be 0.4-1.0%, again in sharp conflict with the high figures of Born, et al. (C.A. 42, 7634d). In ZnS activated by Cu, the concn. of Cu nt. quenching varies with the nature of the exciting radiation; it increases in the order  $\alpha$ -rays,  $\beta$  +  $\gamma$ , ultraviolet (313 m $\mu$ ),  $\gamma$ -rays. Consequently,  $\epsilon$  is the higher, the smaller the energy of the secondary electrons formed, i.e., the greater the efficiency. N. Thon

TIMOFEEVA, T. V.

USSR/Physics - Phosphors  
Spectra

May 50

"Certain Properties of Phosphate Phosphors," V. V. Zelinakiy, F. M. Pekarman, T. V. Timofeyeva, B. I. Vaynberg, State Opt Inst, 5 pp

"Zhur Eksper i Teoret Fiz" Vol XX, No 5

Describes properties of phosphors prepared from phosphates of Cd, Ca, Sr and activated Mn, Pb, Sb, Ce, or combinations Mn + Pb and Mn + Sb. Gives their absorption and radiation spectra, damping laws, and temperature dependence of brightness. Submitted 1 Sep 49.

PA 160T108

"APPROVED FOR RELEASE: 07/16/2001

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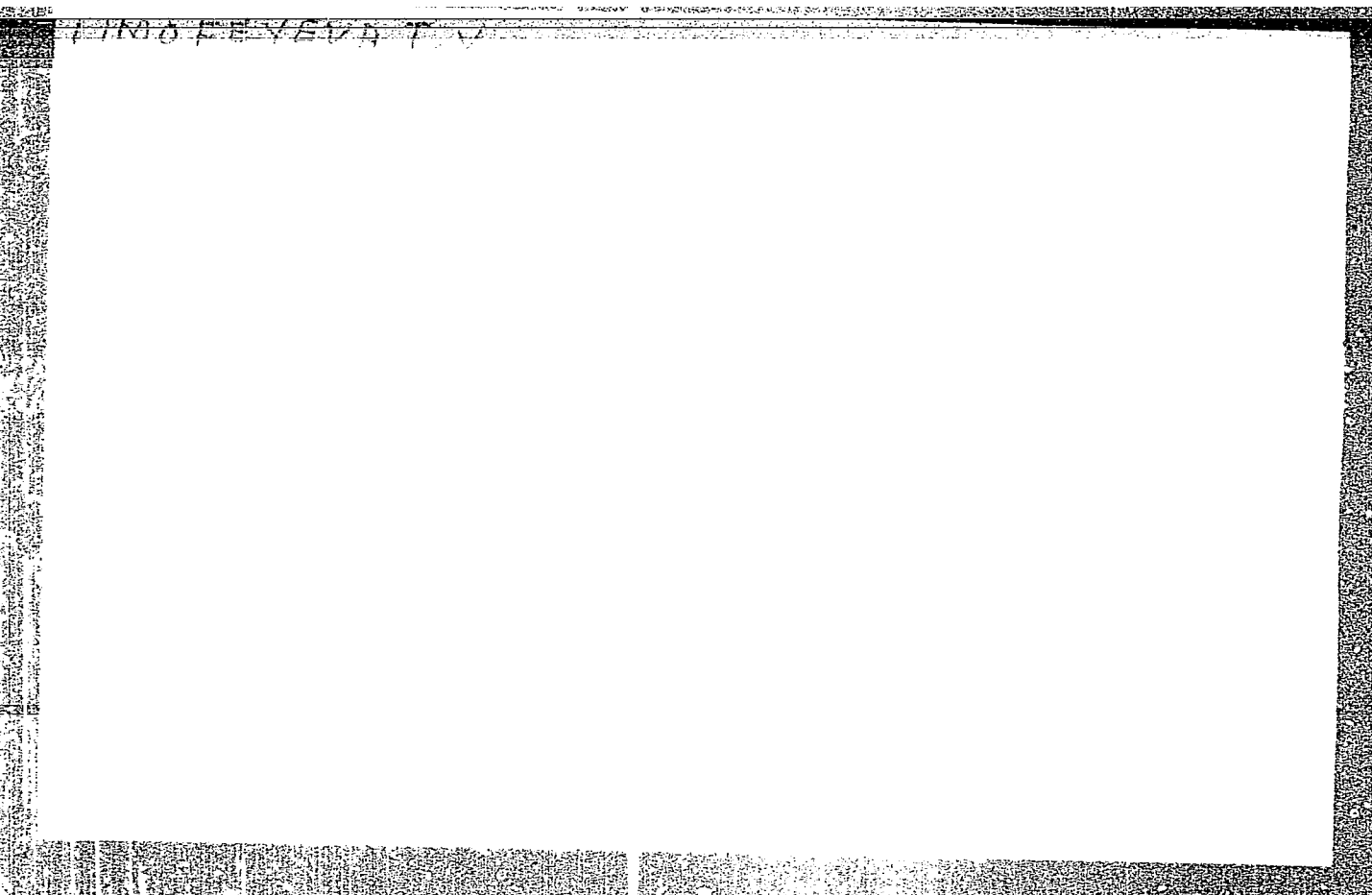
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APPROVED FOR RELEASE: 07/16/2001

CIA-RDP86-00513R001755720018-5"

89-8-12/66

AUTHOR: TIMOFEEVA, T.V.  
TITLE: A Slow Neutron Detector. (Detektor medlennykh neytronov, Russian)  
PERIODICAL: Atomnaya Energiya. 1957, Vol 3, Nr. 8, pp 156-157 (U.S.S.R.)

ABSTRACT: If a scintillator which is responsive to neutrons is produced in such a manner that the light carrier is melted together with the addition of boron, this device is considerably more sensitive with respect to the detection of neutrons than those produced by the two methods hitherto employed.  
By the new method a flat- and a hollow-cylinder scintillator was produced from zinc sulphide activated by silver and boric acid. Its light spectrum has a maximum at 4430 Å .  
The recording sensitivity with respect to neutrons depends to a considerable extent on the thickness of the scintillator and the size of grain.  
The optimum thickness is attained at about two to three grain sizes.

Card 1/2

A Slow Neutron Detector.

89-0-15, --

The sensitivity of the scintillator described in the case of fast neutrons is only 1/100 of that it possesses with respect to slow neutrons. (With 1 Illustration).

ASSOCIATION: Not given  
PRESENTED BY:  
SUBMITTED: 26.11.1956  
AVAILABLE: Library of Congress

Card 2/2

SOV/120-58-2-5/37

AUTHORS: Protopopov, Kh. V., Arslanov, Kh. A., Butomo, S. V. and  
Timofeyeva, E. V.

TITLE: New Liquid Scintillators (Novyye zhidkiye stsintillyatory)

PERIODICAL: Priroda i Tekhnika Eksperimenta, 1958, Nr 2, pp 24-28  
(USSR)

ABSTRACT: Methyl anthranilate scintillators having a high efficiency and which can be used at low temperatures have been studied by the present authors and results of experiments with these scintillators are now reported. The scintillator efficiency was found to increase considerably when naphthalene was introduced into a toluene solution of methyl anthranilate. The change in the efficiency of scintillators on removal of oxygen was found to depend on whether naphthalene was present or not. Particularly noticeable is the increase in the efficiency of terphenyl scintillators containing naphthalene when oxygen is removed from them by means of  $\text{CO}_2$ . Equally interesting is the increase in the efficiency when small quantities of methanol are added. The effect of the removal of oxygen is illustrated by the following example. After the removal of oxygen a solution of 2.5 g/l of methyl anthranilate containing 3% of methanol, 15% of naphthalene, and 82% of toluene had an efficiency greater by a factor of 1.26

Card 1/2

SOV/120-58-2-5/37

New Liquid Scintillators.

compared with a 5 g/l solution of terphenyl in toluene. The characteristics of the various other liquids tried are shown in 4 figures and 1 table. I. Ye. Starik and A.N. Pisarevskiy are thanked for their help. There are 7 references of which 5 are English and 2 are Soviet.

ASSOCIATION: Radiyevyy institut AN SSSR (Radium Institute of the Academy of Sciences USSR)

SUBMITTED: February 28, 1957.

Card 2/2

1. Phosphors---Properties

*1m01 EYE KH, 114*  
AUTHORS: Timofeyeva, T. V., Khormushko, S. P.

48-1-3/20

TITLE: Screens for the Recording of Slow Neutrons (Ekраны для регистрации медленных нейтронов).

PERIODICAL: Izvestiya AN SSSR Seriya Fizicheskaya, 1958, Vol. 22, Nr 1, pp. 14 - 20 (USSR).

ABSTRACT: It was the purpose of the present work to develop a scintillator with an efficiency as high as possible in the counting of the thermal neutrons in the presence of a powerful  $\gamma$ -background. For this purpose the reaction  $(n, \alpha)$  with boron was used. Of the three methods for the production of a scintillator for recording slow neutrons on the basis of zinc sulfide with an addition of boron: the method of common penetration-hardening, the method of the mechanical mixture and the method of sintering the first-mentioned method gave the best results. It is shown that the efficiency of neutron-counting increases with an increase in the thickness of layer and the grain size of the scintillator up to the optimum, which corresponds to a thickness of layer of 2-3 grains. It is shown that the introduction of the scintillator into a varnish diminishes the efficiency of neutron-counting by 2-3-fold. With screens in the shape of a hollow body (sphere, cylinder) which are internally covered with a scintillator-layer it is possible

Card 1/2

Screens for the Recording of Slow Neutrons.

48-1-3/20

to count 8-10 times as many neutrons as with a flat covering. The scintillator is hygroscopic and does therefore not require any humidity protection. Two types of screens are recommended: a flat one of a scintillator-powder and a cylindrical one which is covered by a scintillator-layer on varnish. The efficiency in the counting of the neutrons with a cylindrical screen is three times as high as with a flat one. The coefficient of neutron-counting in the case of a flat screen is evaluated with some percents ( $\sim 5\%$ ) which is close to the theoretically possible value.

There are 7 figures, and 9 references, 1 of which is Slavic.

AVAILABLE: Library of Congress.

1. Chemistry
2. Boron-Application

Card 2/2

8 5768

S/048/59/023/011/002/012  
B019/B060

26-2243

AUTHORS: Timofeyeva, T. V., Khormushko, S. P.

TITLE: New Data on a Slow Neutron Detector 19

PERIODICAL: Izvestiya Akademii nauk SSSR. Seriya fizicheskaya, 1959,  
Vol. 23, No. 11, pp. 1283-1285

TEXT: In recent years, the authors developed a slow neutron detector consisting of a luminous material (svetosostav) based on zinc sulfide with boric acid impurities. The neutron count is done by the  $(n, \alpha)$  reaction in  $B^{10}$ ; the scintillations caused by the  $\alpha$ -particles were recorded with a photomultiplier, on the photocathode of which the detector was placed. The latter was equipped with plane and cylindrical luminous bodies. The present paper is devoted to the investigation of the dependence of slow neutron counts on the boric acid content and on the increase of the count coefficient for neutrons due to the use of boric acid concentrated with  $B^{10}$ . An increase in the  $B^{10}$  content gives rise to an increase in the neutron absorption, which leads to an attenuation of the neutron flux in the lower layers of the luminous material, and to the occurrence of the self-shield-

Card 1/2

85768

New Data on a Slow Neutron Detector

S/048/59/023/011/002/012  
B019/B060

ing effect in thick detectors. In the case of a neutron flux incident perpendicular to the detector, the part of the neutrons absorbed in the detector is  $\alpha = 1 - e^{-\mu d}$ ; for a diffuse neutron flux  $\alpha$  is a complicated function of  $\mu d$ . A strong increase of  $\mu d$  or the  $B^{10}$  content influences  $\alpha$  only slightly ( $\mu$  = absorption coefficient,  $d$  = layer thickness). It is then shown that the countability is determined solely by  $\alpha$ . The height of the pulses has an influence on countability in the sense that the former depend on absorption in the luminous material and on the light yield. The addition of boric acid, especially in larger amounts, decreases the counting efficiency; the latter was determined on a series of illuminators with boric acid content ranging from 4.5 to 40 per cent by weight. The counting efficiency is linearly dependent on the boric acid content and rises with decreasing boric acid content. It is further shown that the increase in countability changes according to the same laws as does the counting efficiency. By using a cylindrical detector instead of a plane one, countability was increased fourfold. This ratio remained the same with the use of concentrated boric acid. There are 2 figures and 2 Soviet references.

ASSOCIATION: Radiyevyy institut im. V. G. Khlopina Akademii nauk SSSR  
(Radium Institute imeni V. G. Khlopin of the Academy of  
Sciences, USSR)

Card 2/2

Al'tsimeynskiy sent. SSSR. Krasnoye po metallicheskomu titalu  
Metodyy spetsial'nogo prikladnogo v chastnykh metallakh (Methods of Specializing Applied  
tural, 23. Prib. Metall.) Moscow, 1960. All p. (Series: It. Tinkh, 12) 3,500  
copies printed.

Resp. Ed.: M.P. Vinogradov, Academician, and D.I. Rubchikov, Doctor of Chemical Sciences, Ed. of Publishing House: M.P. Volynets; Tech. Ed.: T.Y. Polyakova.

**PURPOSE:** This collection of articles is intended for chemists, metallurgists, and engineers.

**COVERAGES:** The article describes methods for detecting and determining chemical elements and their traces in pure metals. Also discussed are many chemical, spectrochemical, electrochemical, spectrophotometrical and luminescence methods of analyzing materials of high purity. The editors state that these methods have been developed within the last five or six years by various Soviet scientific institutions, and are now widely used in research and factory laboratories of the Gosplan Division. No personalities are mentioned. References, mostly Soviet, accompany each article.

Attorney, W. J., P. P. Calmon, E. J. Subbento, and O. B. Pollock. Determination of the Oxygen and Nitrogen Content in Solid Samples of Polybenzoxazines by the Spectral Method

Indium, Z.S., A.A., Filiberto, and J.A. Gutierrez. Determination of Traces of Lead, Tin, Manganese and Cadmium in Metallic Chromium and Its Alloys

Elizick, T.M. Determination of Admixture of Antimony in Pure Chloroform  
and in its Alloys JUL

Person, C.A. Spectral Determination of Adulterants of Bismuth, Cadmium, Lead, Zinc and Antimony in Carboxylic Acids and in Chloride Acetylides 314

ESCHER, Ida, O.A. PERSOFF, and I.F. VORONIA. Spectrochemical Method of Detecting Admixtures of Bismuth, Cadmium, Tin, Tell, and Antimony in Carbazole Anthracite

Barnett, J. M., and W. M. Barnett. Application of Activated A-C  
Furnace to Determine Small Quantities of Sodium, Calcium, and  
Lithium Acetates in Metallic Bismuth and Cadmium

<sup>1</sup>Barbano, A.G., En.I. Populazny, A.L. Blyumova, and V.M. Lyubova.  
Determination of Aminoacids in Beryllium and Beryllium Oxide

Aluminum, S.F., and Z.N. Turberson. Determination of Oxygen in Metallic Beryllium. 1941

ALCOVE, E. J., T. G. BARNES, V. L. KEMPH, F. V. MORGENTHAU, A. A. KOSTER, and P. P. FOSTER, Luminance Method for the Quantitative Determination of Cadmium in Metallic Beryllium

Malekova, O.I., N.P. Gorchakova, K.A. Subbotko, and A.V. Alferova.  
~~Spectroscopic Analysis of Nickel Alloys to Determine Their Basic Components and~~

**Abstracts**  
Burrus, D.M., and T.S. Miron. Spectral Analysis of High-Purity Nickel 86

Abstracts, J.P., and A.A. Bregman. Separation of small quantities of Cobalt from Large Quantities of Nickel

Levanis, V.L., K.Ye. Artyova, and Ye.O. Baranova. Determination of Small Amounts of Gold(III), Silver(I), and Antimony in Metallic Matrix 39

**AVAILABILITY:** Library of Congress

ARAPOVA, E.Ya.; BARANOVA, Ye.G.; LEVSHIN, V.L.; TIMOFEEVA, T.V.; TROFIMOV,  
A.K.; FEOFILOV, P.P.

Luminescent method of quantitative determination of gadolinium in  
metallic beryllium. Trudy Kom. anal. khim. 12:344-354 '60.

(Beryllium--Analysis)

(MIRA 13:8)  
(Gadolinium earths)

22171

S/048/61/025/004/020/048  
B104/B201

26.2244

AUTHORS: Grebenskiy, B. S., Timofeyeva, T. V., Khormushko, S. P.,  
and Tsvetkov, O. S.

TITLE: Increase of the efficiency of a scintillation detector for  
slow neutrons

PERIODICAL: Izvestiya Akademii nauk SSSR. Seriya fizicheskaya, v. 25,  
no. 4, 1961, 500-503

TEXT: The present paper has been read at the 9th Conference on Luminescence  
(Crystal Phosphors), Kiyev, June 20-25, 1960. The authors examined a  
dispersion detector for slow neutrons on the basis of ZnS-Ag and  $H_3BO_3$ ,  
using both natural B and such enriched with  $B^{10}$ . The detectors were  
prepared by joint sintering of ZnS-Ag with  $H_3BO_3$ , and also, for a compari-  
son, by a method described in the literature (Ref. 2: Sun K., Malmberg P.,  
Pesjak F., Phys. Rev., 25, 600 (1954); Nucleonics, 14, No. 7. 46 (1956);  
Ref. 3: Vorisek M., Czechosl. J. Phys., 7, No. 6, 757 (1957)). In the  
first method, a sinter of  $B_2O_3$  was ground with ZnS-Ag and sorted in frac-

Card 1/6

22171

Increase of the...

S/048/61/025/004/020/048  
B104/B201

tions according to given grain sizes. The authors determined the dependence of efficiency  $\eta$  of the recording of slow neutrons on the grain size of the fraction and the thickness of the detector for different percentages of boron oxide concentrated with  $B^{10}$  to different degrees. They further constructed the differential curves of the pulse amplitude distributions of slow neutrons and gamma radiation. Results are collected in the table and the two diagrams (Figs. 1 and 2). The maximum of sensitivity ranges between 30 and 34 wt%  $H_3BO_3$  (Table). There are 2 figures, 1 table, and 6 references: 5 Soviet-bloc and 1 non-Soviet-bloc.

Legend to Table 1: 1) grain size in  $\mu$ ; 2) detector I: 16 %  $H_3BO_3$  with 19 %  $B^{10}$ ; 3) detector II: the same with 85 %  $B^{10}$ ; detector III: 34 %  $H_3BO_3$  with 19 %  $B^{10}$ ; detector IV: the same with 85 %  $B^{10}$ ; detector V: 89 %  $H_3BO_3$  with 19 %  $B^{10}$ .  $l_0$  optimum thickness of detector in  $mg/cm^2$ .

$I$  is the efficiency of the capture of thermal neutrons by the detector with formation of an alpha particle.

Card 2/6

Increase of the...

S/048/61/025/004/020/048  
B104/B201

1) Размер гранул, $\mu$	2) Детектор I: 16% $H_2BO_3$ с 19% $B^{10}$				3) Детектор II: 16% $H_2BO_3$ с 85% $B^{10}$				Детектор III: 34% $H_2BO_3$ с 19% $B^{10}$				Детектор IV: 34% $H_2BO_3$ с 85% $B^{10}$			
	$I_{00}$ мг см $^{-1}$	I	$\alpha$	I/ $\alpha$	$I_{00}$ мг см $^{-1}$	I	$\alpha$	I/ $\alpha$	$I_{00}$ мг см $^{-1}$	I	$\alpha$	I/ $\alpha$	$I_{00}$ мг см $^{-1}$	I	$\alpha$	I/ $\alpha$
800 $\pm$ 150	190	1,6	0,33	4,85	150	3,0	0,72	4,2	160	2,0	0,58	3,8	110	4,2	0,89	4,7
470 $\pm$ 180					120	2,5	0,64	3,9	130	1,7	0,49	3,5	90	3,3	0,85	3,9
185 $\pm$ 100	100	0,9	0,20	4,5	80	1,7	0,51	3,3	80	1,0	0,35	2,9	60	2,5	0,73	3,4

Tab. 1

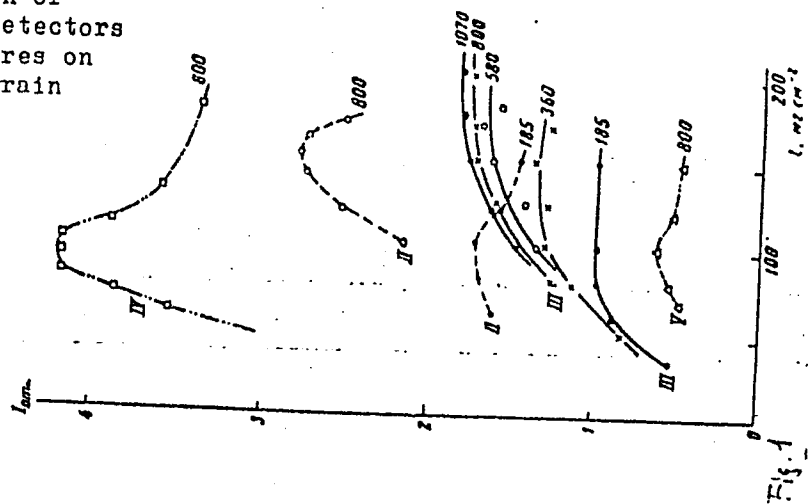
Детектор V: 10% $H_2BO_3$ с 19% $B^{10}$			
$I_{00}$ мг см $^{-1}$	I	$\alpha$	I/ $\alpha$
100	0,69	0,82	0,84
70	0,57	0,71	0,80
55	0,43	0,63	0,68

Card 3/6

Increase of the...

S/048/61/025/004/020/048  
B104/B201

Legend to Fig. 1: relative counting efficiency of slow neutrons as a function of layer thickness for detectors II - IV (Table). Figures on the curves indicate grain sizes in mikrons.



Card 4/6

Increase of the...

22171  
S/048/61/025/004/020/048  
B104/B201

Legend to Fig. 2: Differential curve of amplitude distribution of pulses of slow neutrons and alpha rays. 1) Pulse distribution of slow neutrons for a detector with 30 %  $H_3BO_3$  with 87 %  $B^{10}$ ;  $l = 100 \text{ mg/cm}^2$ , grain size  $750 - 1000 \mu$ ,  $\epsilon_n = 25 \%$ . 2) The same with 34 %  $H_3BO_3$ ;  $l = 200 \text{ mg/cm}^2$ , grain size  $750 - 1000 \mu$ ,  $\epsilon_n = 10 \%$ ; 3) Total distribution of pulses of neutrons and gamma rays for the first detector; 4, 5, 6: distribution of pulses of gamma rays  $RaTh$  ( $E_\gamma = 2.62 \text{ Mev}$ ),  $Ra$  ( $E_\gamma = 1.76 \text{ Mev}$ ), and  $Cs^{137}$  ( $E_\gamma = 661 \text{ kev}$ ).

Card 5/6

2. Neutron detectors for slow neutrons

2.1. Neutron detectors for slow neutrons

2.1.1. Neutron detectors for slow neutrons 19

2.1.1.1. Neutron detectors for slow neutrons 19

2.1.1.1.1. Neutron detectors for slow neutrons 19

2.1.1.1.1.1. Neutron detectors for slow neutrons 19

Card 1/2

Age Group	U.S. should take action (%)	U.S. should not take action (%)
18-29	85	15
30-49	75	25
50-69	85	15
70+	95	5

[illegible]

choice of the optimal detector shape and dimensions is analyzed in [10]. Yu. M.

SUB CODE: NP, OP

1. *Chlorophyll*

22



1. 2715-11

ALGOL 68 N 68 - 11. 11. 11

constructed from printed trans-lated-sized elements. Orig. art. has: 5  
figures and 1 table.

ASSOCIATE Prof. Fiziko-tekhnicheskoye Institut im. A. P. Loma AN SSSR (Institute  
of Physics and Technology, AN USSR)

FORM 111

11. 11. 11

NO REF. SOV. 11. 11. 11

11. 11. 11

11. 11. 11

TIMOFEEVA, T.V.

Study of parasitic arthropods in Adzharia. Sov. AN Obozr. SSR  
28 no. 11:787-80. 1960. (MIRA 19:5)

1. Obozrinskaya laboratoriya biologicheskogo metoda bor'by s  
sel'skokhozyaystvennymi vreditel'nyami, Batumi. Submitted December  
21, 1960.

Card 1/2

1. 01752-1

2. 01752-1

constructed from printed transistorized (integrated) element. Orig. art. has: 5  
figures and 1 table.

ASSOCIATION: Fiziko-tekhnicheskoy Institut imeni N. I. Lobachevskogo AN SSSR (Institute  
for Physics and Technology, AN SSSR)

SUBMITTED: 00

ENCL: 00

SUB CODE: NP

TIMOFEYEVA, T.V., kand.sel'skokhoz.nauk

*Encarsia formosa* Gah., a parasite of the greenhouse whitefly  
*Trialeurodes vaporariorum* Westv. Zashch. rast. ot vred. i bol.

8 no.1:44 Ja '63.

(MIRA 16:5)

(White flies--Biological control)

(Greenhouse plants--Diseases and pests)

(*Encarsia*)

ABSTRACT: The parameters of a shock wave are discussed by adapting

ACCESSION NO: APS-15702

**"APPROVED FOR RELEASE: 07/16/2001**

**CIA-RDP86-00513R001755720018-5**

**APPROVED FOR RELEASE: 07/16/2001**

**CIA-RDP86-00513R001755720018-5"**

TIMOFEEVA, T.Ye.

Electric apparatus for studying the cardiovascular system. Med.prom.  
11 no.6:45-47 Je '57. (MLRA 10:8)

1. Vsesoyuznyy nauchno-issledovatel'skiy institut meditsinskogo  
instrumentariya i oborudovaniya  
(PHYSIOLOGICAL APPARATUS)  
(CARDIOVASCULAR SYSTEM--DISEASES)

TIMOFEEVA, T.Ye.

Pulsimeter. Med.prom. 11 no.8;43-49 Ag '57.

(MIRA 10:11)

1. Vsesoyuznyy nauchno-issledovatel'skiy institut meditsinskogo  
instrumentariya i oborudovaniya.  
(SPHYGMOGRAPH)

9.8300  
27.4000  
9.8000

29763  
S/194/61/000/006/043/077  
D201/D302

AUTHORS:

Timofeyeva, T.Ye. and Antselevich, V.A.

TITLE:

Apparatus for telerecording of human electrocardiograms

PERIODICAL:

Referativnyy zhurnal. Avtomatika i radioelektronika,  
no. 6, 1961, 4, abstract 6 E21 (Novosti med. tekhn.  
1960, no. 3, 27-41)

TEXT: A description is given of a single-channel device for transmitting an electrocardiogram over small distances by means of a radiotransmitter. The heart beat potentials are amplified and applied to the amplitude modulator of an oscillator (frequency 13 kc/s). The AM signal frequency modulates and UHF oscillator (frequency 145 Mc/s). Maximum frequency deviation 50 kc/s. The FM is radiated by a non-resonant antenna. From the receiving antenna the signal goes to a UHF superheterodyne receiver, from which it is applied to a mirror galvanometer. The recording is made on 35 mm

Card 1/2

29753

S/194/61/000/006/043/077  
D201/D302

Apparatus for telerecording...

cine film of photopaper. The power supply is from two accumulators CU-5 (STsS-5) with voltage conversion by a blocking oscillator using two junction transistors type П4А (P4A) with ferrite transformers (ferrite Ш-7) (Sh-7). A similar voltage converter is used in the receiver supply. The transmitter is housed in a box weighing 500 g. Accumulators weighing 350 g are placed at the back. The heart beats are detected by brass plates glued with cardiographic paste. Experiments were carried out with the device for short and long-distance track running. The receiver and recorder were on the stand. When the registration is carried out during an intensive physical effort, the isoelectric line is not shifted, the muscle current does not cause interference in the recording, the amplitude and the shape of dents do not depend on the distance to the receiver. The reliable operating distance is 300 m. 13 references.  
[Abstracter's note: Complete translation]

Card 2/2

TIMOFEYEV, T.Ye.

Device for ~~tele~~-electrocardiography. Med. prom. 15 no.7:46-50  
Jl '61. (MIRA 15:6)

1. Vsesoyuznyy nauchno-issledovatel'skiy institut meditsinskikh  
instrumentov i oborudovaniya.  
(ELECTROCARDIOGRAPHY)

TIMOFEEVA, T.Ye.

Differential amplifier of biopotentials using semiconductor devices. Nov. med. tekhn. no.2:78-82 '62.

(MIRA 17:11)

1. Vsesoyuznyy nauchno-issledovatel'skiy institut meditsinskikh instrumentov i oborudovaniya.

TIMOFEYEV, T. Ye.; SMOLYAK, L.I.; KLYKACHEV, V.A.; BODRYGIN, G.I.

EKS-1 radiotelemetric double-channel electrocardiospirograph.  
Trudy VNIIMIO no.3:134-145 '63 (MIRA 18:2)

KOKIN, K.A.; TIMOFEYeva, T.Z.

Effect of some water mosses on the survival of saprophytic bacteria and Escherichia coli. Nauch.dokl.vys.shkoly; biol.nauki no.4:164-167 '62. (MIRA 15:10)

1. Rekomendovana kafedroy gi gidrobiologii Moskovskogo gosudarstvennogo universiteta im. Lomonosova.  
(BRYOPHYTES) (WATER--MICROBIOLOGY) (ESCHERICHIA COLI)

KIBAL'CHICH, I.A.; BELOVA, I.M.; BRUK, Ye.S.; SOSUNOVA, I.N.; GUTKOVSKAYA,  
A.I.; ZHAKOV, Yu.A.; TIMOFEYEVA, T.Z.

Sanitary evaluation of the consequences of flooding tree plant-  
ations during the construction of reservoirs. Gig.i san. 25 no.1:  
15-20 Ja '60. (MIRA 13:5)

1. Iz Moskovskogo nauchno-issledovatel'skogo instituta sanitarii  
i gigiyeny imeni F.F. Erismana Ministerstva zdravookhraneniya RSFSR.  
(WATER RESOURCES DEVELOPMENT--HYGIENIC ASPECTS)

18

Production of pyrophosphates containing potassium.  
A. B. Bekturov and V. A. Timofeeva. *Vestnik Akad. Nauk Kazakh. S.S.R.* 5, No. 7 (40), 81-6 (1948).—The products obtained by 45-min. heating at 800, 900, and 1000°, of 100 parts of a phosphorite contg. 27-28%  $P_2O_5$  with 25-60 parts potash (contg. 90%  $K_2CO_3$ ) were analyzed for insol. residue, and for total and citric acid-sol.  $P_2O_5$ . With 25 parts potash, conversion of  $P_2O_5$  into the citric acid-sol. state is unsatisfactory even at 1000°, as the degree of decompn. is only 39%, and the insol. residue 36%. The latter decreases rapidly with the amt. of potash in the batch, and at the same time the citric acid-sol. part and the degree of decompn. increase; thus, at 800°, with 40 and 60 parts potash, the insol. residue was 18.9 and 4.6, citric acid-sol.  $P_2O_5$  14.80 and 19.90, decompn. 64.0 and 95.0%; at 1000°, with 40 and 60 parts potash, 6.88 and 2.84, 20.4 and 21.8, 86.4 and 99.4%. The optimum ratio phosphorite:  $K_2CO_3$ , at 900° and 1000°, is 100:55 and 100:50, resp. With  $K_2CO_3$ , max. decompn. is attained at a lower temp. than with  $Na_2CO_3$ . Heating in  $H_2O$  vapor (instead of in air) saves potash; thus, in the temp. range 900-1000°, max. decompn. is attained with about 40 parts potash/100 phosphorite. At that const. ratio, increase of the temp. from 900 to 1000° does not change any further the amt. of citric acid-sol.  $P_2O_5$  or the degree of decompn.

N. Thon

Chemical Abst.

Vol. 48 No. 6

Mar. 25, 1954

Acids, Alkalies, Salts, and  
Other Heavy Chemicals

Structure of fused phosphates. V. A. Tshinova and A. B. Bekturov. *Izvest. Akad. Nauk Kazakh. S.S.R.* No. 101, Ser. Khim. No. 4, 71-5 (1951).--The products of slow cooling of fused phosphates (apatite, phosphorite, MgO, quartz sand, and natural serpentine) show under the microscope the form of anisotropic grains, dendrites with medium or high birefringence, with  $n$  1.61-1.63. Citrate soly. of the products is under 4%. Products of rapid cooling are glassy, with conchoidal fracture, with  $n$  in some specimens at 1.57-1.58, in others 1.61-1.63. The  $H_3PO_4$  content of such specimens is completely sol. in 2% citric acid. X-ray photographs confirmed the fact that the crystal. part of the products are compts. close to fluorapatite, while the amorphous part is close to glass.  
G. M. Kosolapoff

(2)

Chem

4/6/54  
BW

TI OLE WVA, V. A.

3

(2)

Potassium-containing thermophosphates. A. B. Nek-  
turov and V. A. Tynoleeva. *Izvest. Akad. Nauk Kazakh.  
S.S.R., Ser. Khim.* 1953, No. 5, 102-6; *Refest. Zhur.  
Khim.* 1953, No. 7187.—Phosphorite (20.3%  $P_2O_5$ ) sin-  
tered with pure  $K_2SO_4$  and charcoal under favorable condi-  
tions yields a product which is in its entirety in available  
form. The mechanism of the process is analogous to the  
sintering of phosphorite with  $Na_2SO_4$ . The reactions  
involved are: in the presence of air  $Ca_3P_2(PO_4)_6 + 4$   
 $K_2SO_4 + 8 C + 8 O_2 \rightarrow 6 CaKPO_4 + 2 KF + 4 CaO + 8$   
 $CO_2 + 4 SO_2$  and in the presence of water vapor  $Ca_3P_2$   
 $(PO_4)_6 + 3 K_2SO_4 + 6 C + 4 H_2O \rightarrow 8 CaKPO_4 + 2 HF +$   
 $4 CaO + 3 H_2S + 6 CO_2$ . In the presence of air the max.  
decompn. of phosphorite requires more sulfate than under  
similar conditions in the presence of water vapor. In the  
latter case the requirement of sulfate is less and the  $P_2O_5$   
content in the product is higher. The most favorable con-  
ditions for sintering in the presence of water vapor are  
duration 30 min. at  $1100^\circ$  and compn. of charge: phosphorite  
100, sulfate 50, H charcoal 25 parts by wt. The product  
contains total  $P_2O_5$  23.8, citric acid-sol. 23.1, F 0.29, and  
 $K_2O$  16.1%. Degree of decompn. of phosphorite is 99%.  
M. H.

TIMOFEEVA, V. H.

Structure and morphological peculiarities of fluorophlogopite and teniolite. I. I. YAMZIN, V. A. TIMOFEEVA, T. I. SHASHKINA, E. N. BELOVA, AND N. V. GLIKL. *Zapiski Vsesoyuz. Mineralog. Obshchestva*, 84 [4] 415-21 (1955).—Two different micas were synthesized, fluorophlogopite,  $\text{KMg}_2(\text{Si}_2\text{Al})_2\text{F}_2$  (I), and teniolite,  $\text{KMg}_2\text{Li}(\text{Si}_2\text{Al})_2\text{F}_2$  (II), having the fluorophlogopite structure. The micas were obtained by slow cooling of a melt of the pure oxides and fluorides in stoichiometric proportions. Differential thermal analysis of the melts yielded melting points of  $1340^\circ \pm 5^\circ\text{C}$ . and  $1185^\circ \pm 5^\circ\text{C}$ . for I and II, respectively. X-ray measurement of interplane distances showed the same values as in various natural micas of the I type; values of distances  $a$ ,  $b$ ,  $c_a$ , and  $c$  were 5.32, 9.16, 10.01, and 10.2, respectively; the monoclinic angle was  $100^\circ$ . The micas synthesized showed no change in structure when heated from room temperature to  $1000^\circ\text{C}$ . from the powder X-ray patterns, in contrast to natural phlogopite. Optical properties measured were  $n_\gamma$ ,  $n_\beta$ , and  $n_\alpha$ , having values of 1.549, 1.518, and 1.522, respectively, for I and 1.540, 1.540, and 1.513 for II. Birefringence was 0.41 and the angle  $2V$  was nearly 0. II was transparent in the visible range above 270  $\mu\mu$ . Morphological characteristics shown reveal the spiral growth of crystals and the presence of screw dislocations. Star formations and stepped "hills" on crystal faces were observed. 12 figures, 22 references. D.T.W.

Inst. Crystallography, AS USSR

TIMOFEYEVA, V. A., GLIKI, N. V., and PLETENEVA, I. A.

"Spiral Growth Layers on Barium Titanate Crystals," by N. V. Glik, I. A. Pleteneva, and V. A. Timofeyeva, Institute of Crystallography, Academy of Sciences USSR, Kristallografiya, Vol 1, No 5, 1956, pp 607-608 ✓

For the first time in the investigation of the growth of crystals of seignetteoelectric substances, the occurrence of spiral growth layers was discovered during crystallization in the case of barium titanate. Pictures were taken which show the spirals and the boundaries of domains inside the crystal.

Sum 1258

*TIMOFEYEVA, V.A.*  
USSR/Physical Chemistry. Crystals.

B-5

Abs Jour: Ref Zhur-Khimiya, No 5, 1957, 14548

Author : V. A. Timofeyeva, I. I. Yamzin

Inst : Institute of Crystallography

Title : The Formation of Corundum and Spinel from the Gaseous Phase

Orig Pub: Tr. In-ta kristallogr. AN SSSR, 1956, vyp 12, 67-72

Abstract: In conducting experiments on the crystallization from the fusions of mixtures of oxides and fluorides at a high temp. there was discovered from the gaseous phase, depending on the composition of the batch, the formation of crystals of corundum,  $MgO \cdot Al_2O_3$ ,  $ZnO \cdot Al_2O_3$ ,  $ZnO$ ,  $MnO \cdot Al_2O_3$ ,  $ZnO \cdot Fe_2O_3$ . The form of crystals is described and the values of coefficients of hardness and refraction are given. The derivative products were carefully dehydrated and the authors believe the reactions proceed without the participating water, in contrast to the assumption made previously (Lacroix A., Bull. Soc. min., 1887, 10, 157-158).

Card 1/1



AUTHORS: Timofeyeva, V.A. and Pleteneva, I.A.

70-3-2-13/26

TITLE: Investigation of the Process of Crystallisation of Barium Titanate from a Barium Chloride Melt (Issledovaniye protsessa kristallizatsii titanata bariya iz rasplava khloristogo bariya)

PERIODICAL: Kristallografiya, 1958, Vol 3, Nr 2, pp 214 - 218 (USSR).

ABSTRACT: The process of the crystallisation of barium titanate from a barium chloride melt in the temperature interval 1 200 to 1 470 °C was followed by differential thermal analysis. From the data obtained, the phase diagram of the system BaCl<sub>2</sub>-BaTiO<sub>3</sub> was constructed and by choosing the right conditions triangular or square crystals of BaTiO<sub>3</sub> could be grown up to 1 cm<sup>2</sup> in area. The m.p. of BaCl<sub>2</sub> is 962 °C and that of BaTiO<sub>3</sub> 1 610 °C. There is a eutectic at 900 °C at a composition of about 4% BaTiO<sub>3</sub>. The solidus at about 1 220 °C runs from 25 - 100 mol% BaTiO<sub>3</sub> and the liquidus rises from 1 220 °C 25% BaTiO<sub>3</sub> to 1 610 °C at 100% BaTiO<sub>3</sub>.

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Investigation of the Process of Crystallisation of Barium Titanate  
from a Barium Chloride Melt

70-3-2-13/26

Specimens of  $\text{BaTiO}_3$  were made by fusing  $\text{BaCl}_2$ ,  $\text{BaCO}_3$  and  $\text{TiO}_2$  in appropriate proportions in corundum, Pt and Pd crucibles. The crystals of  $\text{BaTiO}_3$  crystallising out at high temperatures were flat, triangular plates and twinned triangles (twinned into squares). With decreasing temperature and  $\text{BaTiO}_3$  concentration more isometric crystals in the form of cubes were produced as well as tetragonal prisms and rectangular parallelepipeds. It is concluded that  $\text{BaTiO}_3$  crystals can be grown under a wide range of temperatures and concentrations. There are 6 figures, 1 table and 8 references, 3 of which are Soviet, and 5 English.

ASSOCIATION: Institut kristallografii AN SSSR  
(Institute of Crystallography, Ac.Sc. USSR)

SUBMITTED: May 31, 1957  
Card 2/2

LIMONOV, V. A.

24 (2)

PLASMA I BOOK EXFOLIATION

REV/2553

Abstracts with ISSN. Institute Kristallografi

Book Kristallografi, Vol. 2 (Growth of Crystals, Vol. 2) Moscow, 1979. 298 p. Known only in Russian. 2,000 copies printed.

Berg, M.: A. V. Shubnikov, Academician, and N. R. Shatalov, Doctor of Geological and Mineralogical Sciences; Ed. of Publishing House: E. R. Akhmedov; Book. Ed.: V. V. Polubnyakov.

PREFACE: This book is intended for scientists and researchers engaged in crystallography and in growing industrial monocystals.

CONTENTS: This is the second of two volumes on crystal growth. The first volume contained reports delivered at the First Congress on Crystal Growth. The present volume also contains an extensive study of corundum synthesis by A. E. Popov (Moscow). These studies reflect the development of Soviet research in crystallography in the period following the first congress. The studies contain some essentially new results obtained by Soviet scientists. The editors express the hope that these studies will make the efforts of Soviet scientists engaged in studying the process of crystal growth and in growing industrially valuable monocystals. No personalities are mentioned. References are given at the end of each article.

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S/058/62/000/009/022/069  
A006/A101

18 9560,

AUTHORS: Timofeyeva, V. A., Zalesskiy, A.V.

TITLE: Ferrite crystallization from liquid and gaseous phases

PERIODICAL: Referativnyy zhurnal, Fizika, no. 9, 1962, 10, abstract 9E73  
(In collection: "Rost kristallov. T. 3", Moscow, AN SSSR, 1959, 88 -94)

TEXT: The authors investigated the growth of various ferrite crystals. It is shown that besides molten borax, molten fluorides of some metals can be used as solvents. However, on account of their intensified evaporation at high temperatures, mainly molten borax was used. From this solvent single crystals of plain (cobalt and manganese) and mixed ferrites (zinc-manganese and zinc-nickel) were grown. A seed was placed into the upper section of the melt-containing vessel, and then a temperature gradient between the upper and lower sections of the container was developed. The grown crystals were octahedral-shaped with 6 - 7 mm long edges. The growth of the seed was also caused by evaporating the solvent. The dissolved substances evaporated together with the sol- JB

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Ferrite crystallization from liquid and gaseous phases S/058/62/000/009/022/069  
A006/A101

vent; as a result crystals from the gaseous phase grew on the crystallizer walls. Their length attained sometimes 15 - 20 mm. For the purpose of checking the composition of the crystals obtained and of studying structural changes during heating, the temperature dependence of their specific magnetization was investigated and the Curie point determined. In some cases magnetization isotherms were plotted to evaluate magnetization and saturation. The reversibility of temperature dependence curves at repeated heating and cooling indicates the absence of changes in the structure and composition. ✓B

Yu. Krishtal

[Abstracter's note: Complete translation]

Card 2/2

24,2200

S/196/62/000/009/005/018  
E114/E184

AUTHORS: Timofeyeva, V.A., and Zaleskiy, A.V.

TITLE: Crystallization of ferrites from fluid and  
gaseous phases

PERIODICAL: Referativnyy zhurnal, Elektrotehnika i energetika,  
no.9, 1962, 1, abstract 9 B6. (Rost kristallov,  
v .2, M., AN SSSR, 1959, 88-94)

TEXT: Various ferrite crystals were grown from melts and  
some of their magnetic characteristics were studied. The use of  
some fluorides and borax as solvents was tried. Single crystals  
were grown from seed crystals in molten borax in two ways:  
1) from the liquid phase, by lowering the temperature of the melt;  
2) from the gaseous phase by evaporating the solvent at constant  
temperature. Crystals obtained in these two ways have very  
similar characteristics. Crystals from the gaseous phase attained  
15-20 mm. The structure of the grown crystals was investigated.  
Curves are given for different ferrite crystals grown from liquid  
phase relating specific intensity of magnetisation of the crystals  
Card 1/2

Crystallization of ferrites from... S/196/62/000/009/005/018  
E114/E184

to temperature. All curves show good reversibility during repeated heating and cooling, while the general shape of the curve indicates absence of impure ferro-magnetic phases. A comparison is made of  $\ominus$ , for the polycrystalline samples and single crystals. The observed divergences are explained by the presence in the specimens of certain quantities of  $\text{Fe}^{2+}$  and  $\text{Mn}^{3+}$ .

[Abstractor's note: Complete translation.]

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S/196/62/000/009/007/018  
E114/E184

AUTHOR: Timofeyeva, V.A.

TITLE: Investigation of the process of growth of  
barium titanate crystals from the solution in  
barium chloride melts

PERIODICAL: Referativnyy zhurnal, Elektrotekhnika i energetika,  
no.9, 1962, 5, abstract 9 B23. (Symposium Rost  
kristallov (Growth of Crystals), v.2, M., AN SSSR,  
1959, 95-101).

TEXT: The process of growth of single crystals of BaTiO<sub>3</sub> from  
solutions in BaCl<sub>2</sub> melts was studied in relation to the  
composition of the starting materials and the conditions of  
heating and cooling the melt. The usual method of crystallization  
without stirring the melt was used; crystallization begins from  
the bottom of the crucible where the degree of super-saturation  
is highest. By ensuring that during dissolution of BaTiO<sub>3</sub> in the  
BaCl<sub>2</sub> melt the distribution of the BaCl<sub>2</sub> concentration in the  
crucible corresponds with the crystallization curve of BaTiO<sub>3</sub> from  
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Investigation of the process of ...

S/196/62/000/009/007/013  
E114/E184

BaCl<sub>2</sub>, it was possible to ensure successfully the growth of BaTiO<sub>3</sub> crystals over the whole crystallization range right up to the eutectic. The size of the crystals depends on the height of the melt layer in the crucible. From the bottom of the crucible BaTiO<sub>3</sub> usually crystallizes in hexagonal form. By controlling the speed of cooling of the melt it is possible to grow BaTiO<sub>3</sub> crystals in the shape of thin or thick plates, regular cubes or other forms of the cubic system. In several cases BaTiO<sub>3</sub> twin crystals formed, and the author attributes this to a polymorphic transition into the cubic system. In the case of considerable re-cooling, and consequently of a high degree of super-saturation, growth of BaTiO<sub>3</sub> crystals in dendrites was observed.  
2 references.

[Abstractor's note: Complete translation.]

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S/058/62/000/005/081/119  
A061/A101

AUTHOR: Timofeyeva, V. A.

TITLE: A study of the growth of barium titanate crystals from a solution  
in a barium chloride melt

PERIODICAL: Referativnyy zhurnal, Fizika, no. 5, 1962, 24, abstract 5E196 (V sb.  
"Rost kristallov. T. 2", Moscow, AN SSSR, 1959, 95 - 101)

TEXT: The growth of  $\text{BaTiO}_3$  crystals from a solution in a  $\text{BaCl}_2$  melt was studied by changing the initial composition as well as the heating and cooling conditions of the melt.  $\text{BaTiO}_3$  was crystallized from the unstirred melt super-cooled by 80 - 100°C, starting from the bottom of the crucible. If the  $\text{BaTiO}_3$  concentration is maximum and that of  $\text{BaCl}_2$  is insignificant,  $\text{BaTiO}_3$  crystals grow in the form of thin transparent hexagonal plates. If the melt is super-cooled considerably,  $\text{BaTiO}_3$  assumes the dendritic shape. If both supersaturation and cooling rates are very low,  $\text{BaTiO}_3$  crystals grow isometrically to assume the cubic shape and that of rectangular parallelepipeds. In this case, spirals

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A061/A101.

appear on the crystal faces. Information on the pickling of  $\text{BaTiO}_3$  crystals is provided.

M. Khomyakova

[Abstracter's note: Complete translation]

Card 2/2

24.7100

77116  
SOV/70-4-6-17/31

AUTHORS: Glikl, N. V., Timofeyeva, V. A.  
TITLE: Spiral Growth Layers on Barium Titanate Crystals. II  
PERIODICAL: Kristallografiya, 1959, Vol 4, Nr 6, pp 908-912 (USSR)  
ABSTRACT: Spiral growth of  $BaTiO_3$  crystals was noted during a previous investigation (N. V. Glikl, I. A. Pleteneva, V. A. Timofeyeva, Kristallografiya, 1, 5, 607-608, 1956) by differential thermal analysis of the growth conditions of these crystals. The growth methods are given in Table 1. A study of the crystals showed that spiral growth is directly associated with the presence of inclusions inside them. It is likely that at the incept of crystallization there is skeletal growth, with hollows which later become inclosures and near which dislocations appear. Interferometric study of the faces of a series of samples showed that individual spirals differ in their step heights  $H$  and angle  $\theta$  of the turn of the spiral contour relative to the contour of the peripheral part of the crystal. Measurement

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Spiral Growth Layers on Barium Titanate Crystals. II

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of the distances  $\Delta_n$  and  $\Delta_{n-1}$  between consecutive loops of the spiral showed that  $\frac{\Delta_n}{\Delta_{n-1}}$  varies from crystal to crystal and its increase coincides with increase of  $\theta$ . No relation was found between  $H$  and  $\theta$ . The data are given in Table 2 and used to Amelinckx' relation between  $\theta$ ,  $\frac{\Delta_n}{\Delta_{n-1}}$ , and  $v/V$  ( $v$  is tangential shift of the spiral contour elongation). Obtaining

$$\theta = \arctg\left(\frac{v}{V}\right), \quad (1)$$

$$\Delta_n / \Delta_{n-1} = 1 + 2kM, \quad (2)$$

WHERE

$$k = \frac{v}{V-v}, \quad M = 1 + m + m^2 + m^3, \quad m = 1 + 2k.$$

$v/V$  from (1) and substituting in (2), the calculated and measured values were found to agree within

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Spiral Growth Layers on Barium Titanate Crystals. II

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SOV/70-4-6-17/31

Table 1. Data for comparing conditions of  $\text{BaTiO}_3$  crystals' formation in the two systems:  $\text{BaCl}_2\text{-BaTiO}_3$  and  $\text{KF-BaTiO}_3$ .

System	Vessel	Initial batch volume, ml	Rate of heating deg./hr	Max temp °C	Cooling rate deg./hr	Size of crystals on the surface of melt, mm
$\text{BaCl}_2\text{-BaTiO}_3$ (Diff. therm. analysis)	Corundum crucible Nr 3	25-30	80-100	1480	60-80	0.4-0.5
$\text{Kf-BaTiO}_3$	Platinum cup Nr 6	50-300	40-50	1250	150-200	1.0-1.5

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Crystals. II

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Table 2

$\theta$ , degrees	$H$ , $\mu$	$\frac{\Delta_n}{\Delta_{n-1}}$ meas- ured	$\frac{\Delta_n}{\Delta_{n-1}}$ calc.	Average length of crystals, mm
3,5-4,5*	20	1,5-1,8	1,0-1,0	0,47
4,5-5,5*	330	1,7-1,8	1,0-2,2	0,52
7,0-8,5	37	2,7-3,4	2,7-3,3	0,52
8,5-9,5	10-120	3,5-3,7	3,3-3,8	0,92
9,0-11,0	17	4,0-5,3	3,0-4,8	0,84
13,0-13,5	48	5,0-7,4	6,0-7,2	1,00

\* Data mark

\*For crystals grown from the system  
 $\text{BaCl}_2\text{-BaTiO}_3$

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Spiral Growth Layers on Barium Titanate  
Crystals. II.

77116

SOV/70-4-6-17/31

the limits of experimental error. Extension of the idea of S. Amelinckx and E. Votava (Naturwissenschaften, 40,10,290-291, 1953) that the spiral step forms as a result of the growth and interaction of two steps of unequal heights formed on the crystal surface because of a Frank-Read source may explain the combination of spiral and cross steps found in the crystals. An assumption that there is a system of two groups of dislocations of opposite sign inside a crystal explains such peculiarities of  $\text{BaTiO}_3$  crystals as extremely oblique profile of the steps and the absence of empty craters in the center of the spirals. A peculiar, closed octagon form observed on the crystals is probably due to the interaction of spiral layers of opposite sign. There are 2 tables; 5 figures; and 6 references, 3 Soviet, 1 French, 1 German, 1 U.S. The U.S. reference is P. W. Forsbergh, Phys. Rev., 76, 8, 1187-1201, 1949.

ASSOCIATION: Crystallography Institute, Academy of Sciences, USSR  
(Institut kristallografi AN SSSR)

SUBMITTED: June 6, 1959

Card 5/5

24.7100

78106

SOV/70-5-1-15/30

AUTHORS: Glikl, N. V., Timofeyeva, V. A.

TITLE: Spiral Layer Growth on Sodium Niobate Crystals

PERIODICAL: Kristallografiya, 1960, Vol 5, Nr 1, pp 105-107  
(USSR)

ABSTRACT: Continuing their studies on growth spirals (Abstract 77116) the authors produced  $\text{NaNbO}_3$  crystals by cooling a melt in which the niobate was dissolved in  $\text{NaF}$ , from  $1300^\circ \text{C}$  at the rate of 10 and  $100^\circ \text{C}$  per hr. Spiral steps appeared at the higher rate of cooling, and in the majority of cases formed depressions on crystal faces,  $2-5 \text{ mm}^2$ . No spiral steps appeared at the lower rate of cooling, and the resulting about  $1 \text{ cm}^2$  faces were plane. Some of the spirals were of square symmetry, the others "circular." The sides of the former were turned under different angles  $\phi$  relative to the edges of the crystals. The height  $H$  of steps varied, too.

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Spiral Layer Growth on Sodium Niobate Crystals

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No dependence of  $\theta$  on H was evident.  $\theta$  changed, depending on the value of a oversaturation which controls v:V ratio, where v and V, respectively, are the lateral rates of crystal growth and of the motion of unit layers with height H. Since  $\theta$  and H seem to vary independently, the dependence of V of the above ratio, of which  $\theta$  is a function, on H fails to explain variations of  $\theta$ . Consequently, v seems to control  $\theta$ . The dendritic crystals of initial growth adsorb gas and liquid, which, remaining in the form of inclusions, usually form straight chains transverse to the crystal faces. The intersections of such chains with crystal faces were found to be the most frequent centers of growth spirals. The defects, confined to the joint of different pyramids of growth, were the centers of other spiral steps. The crystals grown on the surface of the melt had more abundant growth spirals than those grown within the melt. Besides, the spiral steps formed depressions on the former and projections on the latter. This obviously is the the result of a better supply within the melt than on its

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Spiral Layer Growth on Sodium Niobate Crystals

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surface. The steps within a spiral are usually closely spaced. There are 3 figures; 1 table; and 7 references, 4 Soviet, 2 U.S., 1 Danish. The U.S. references are: B. T. Matthias, J. P. Remeika, Phys. Rev., 82, 5, 727 (1951); B. T. Matthias, Phys. Rev., 75, 11, 1771 (1949).

ASSOCIATION: Crystallographical Institute of the Academy of Sciences of the USSR (Institut kristallografii AN SSSR)

SUBMITTED: April 14, 1959

Card 3/3

*Timofeyeva, V. A.*

5.1150

S/070/60/005/03/007/008

E132/E360 82269

AUTHOR: Timofeyeva, V. A.

TITLE: Certain Peculiarities in the Growth of Crystals of Ferrites  
Having the Garnet Structure

PERIODICAL: Kristallografiya, 1960, Vol. 5, No. 3,  
pp 476 - 477 + 2 plates

TEXT: Crystals of yttrium ferrite ( $Y_3Fe_5O_{12}$ ) and of a series of rare-earth ferrites have been grown by using Nielson's method (J. App. Phys. Vol 29, 390, 1958) with certain changes to the heating and cooling systems. PbO was used as a solvent and the mixture of oxides  $PbO-Fe_2O_3-R_2O_3$  was heated to about 1330 °C, at which temperature it became homogeneous, and then cooled at 2 - 3 °C/h to 1000 °C. Crystals of the following compounds were obtained, having dimensions of 5-8 mm:  $Y_3Fe_5O_{12}$ ,  $Dy_3Fe_5O_{12}$ ,  $Gd_3Fe_5O_{12}$ ,  $Er_3Fe_5O_{12}$ ,  $Ho_3Fe_5O_{12}$ ,  $Yb_3Fe_5O_{12}$  and  $(Y_{1/2}, Nd_{1/2})Fe_5O_{12}$ . Crystals of the yttrium garnet are usually elongated but here they were obtained predominantly in isometric forms. Usually the crystals

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